

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Anders Herman Torp, et al. :
: Art Unit: 3768
Serial No.: 10/822,935 :
: Examiner: Laryea, Lawrence N.
Filed: April 13, 2004 :
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For: METHOD AND APPARATUS FOR :
DETECTING ANATOMIC STRUCTURES :

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Commissioner for Patents
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In response to the Final Office Action dated March 27, 2008 and the Advisory Action dated July 31, 2008, Applicants request review of the final rejection in the above identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal.

Review and reversal is requested for the following reasons:

REMARKS

In a Final Office Action dated March 27, 2008, the Examiner rejected claims 1-21, which are all of the pending claims in the present application. Applicants filed on May 27, 2008 an Amendment after Final. On July 31, 2008, an Advisory Action was mailed in which the Examiner maintained the rejection of all claims. Applicants respectfully submit that all presently pending claims are allowable over the references cited by the Examiner.

Claims 1-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0072671 (Chenal) in view of U.S. Patent Application Publication 2004/0037455 (Klingensmith). Applicants respectfully submit that the combination of Chenal and Klingensmith fails to establish a prima facie case of obviousness. Applicants request that the outstanding rejections be reversed.

Independent claim 1 recites a method for detecting an anatomic structure based on a medical diagnostic imaging data set, comprising “obtaining a data set representative of a diagnostic image corresponding to an anatomic structure; identifying at least one anatomic landmark within said data set; overlaying said data set with a contour template; and analyzing a search region of said data set surrounding said contour template to identify transition points associated with a predefined characteristic of the anatomic structure and based at least on a transition smoothness.”

As admitted on page 3 of the Final Office Action dated March 27, 2008, Chenal fails to describe identifying transition points based on a transition smoothness. The Office asserts that Klingensmith makes up for this deficiency. Applicants submit that Klingensmith fails to make up for the deficiency and does not describe identifying transition points based on a transition smoothness.

In contrast to identifying transition points based on a transition smoothness, Klingensmith describes smoothing an approximated border after control or transition points have been extrapolated into a second image from a first image. The control points are not extrapolated into the second image based on a transition smoothness. For example, nowhere does Klingensmith

describe using a smoothness of transitions between the control points to identify or determine the control points within the second image. Rather, the control points are extrapolated from the first image into the second image of Klingensmith “using Cartesian coordinates” (see paragraph [0031]) to identify the control points in the second image. The border curvature or smoothness is only later used to “ensure that the border...does not include any sharp transitions (e.g., corners, etc.)”. (Paragraph [0012] of Klingensmith). Smoothing a border contour is known. However, there is simply no description within Klingensmith of identifying transition points based on transition smoothness. The border smoothing described in Klingensmith does not identify new control points. Rather, a Cartesian coordinate matching process is used to identify the border control points within the second image using the Cartesian coordinate values of the control points in the first image, which is not the same as identifying the control points based on a transition smoothness. The smoothness of the border of Klingensmith has nothing to do with identifying or determining the control points.

In the Advisory Action dated July 31, 2008, the Examiner argues that “Applicant’s claims as written do not exclude implementing the analyzing step with separate algorithms for analyzing the ‘anatomic structure’ and the ‘transition smoothness’ aspects”. Regardless of whether claim 1 makes such an exclusion, claim 1 recites identifying transition points based on a transition smoothness. As discussed above, the control points of Klingensmith are not identified using a transition smoothness. Rather, the control points of the border of Klingensmith are identified by matching the Cartesian coordinate values of the control points in the first image with the corresponding Cartesian coordinate values in the second image. For at least the reasons set forth above, Klingensmith does not make up for the deficiencies of Chenal.

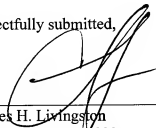
Because Chenal and Klingensmith individually fail to describe one or more elements of independent claim 1, it follows that a combination of Chenal and Klingensmith cannot describe or suggest such element(s). Accordingly, Applicants submit that independent claim 1 is allowable over Chenal in view of Klingensmith.

Independent claims 13 and 17 are submitted to be patentable over the cited references for at least the reasons set forth above with respect to independent claim 1.

Dependent claims 2-12, 14-16, and 18-21 are submitted to contain further recitations that are not anticipated or rendered obvious by Chenal in view of Klingensmith. For example, claim 7 further recites “scoring candidate transition points within said search region based on at least one of...a smooth spatial transition between adjacent transition points in a diagnostic image”, and claim 8 further recites “selecting a path through candidate transition points in said search region based on transition smoothness.” As described above, Klingensmith does not describe using a transition smoothness between different analyzed points to identify transition points. the control points of the border of Klingensmith are identified by matching the Cartesian coordinate values of the control points in the first image with the corresponding Cartesian coordinate values in the second image. The border curvature or smoothness is only later used to ensure that the border does not include any sharp transitions, and does not include identifying new control points. Additionally, claims 2-12 depend from independent claim 1, claims 14-16 depend from independent claim 13 and claims 18-21 depend from independent claim 17. Because independent claims 1, 13, and 17 each recite allowable subject matter, dependent claims 2-12, 14-16, and 18-21 also recite allowable subject matter.

In view of the foregoing, Applicants submit that the Office has failed to support the rejection of the pending claims and the combination of Chenal in view of Klingensmith lacks at least one element of the claims. Thus, it is respectfully submitted that the pending claims define allowable subject matter over the cited references and reversal of the outstanding rejection is therefore respectfully requested.

Respectfully submitted,



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